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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,325	08/27/2001	Anthony Kim	PALM-3672	5086

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EXAMINER

SHAPIRO, LEONID

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 01/28/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/940,325

Applicant(s)

KIM ET AL.

Examiner

Leonid Shapiro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2,5,7-8,10,12-14,16,18-20,23,25-26,28-29,31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chacon et al. (US Patent No. 5,831,819) in view of Preker (US Patent No. 5,598,469).

As to claim 1, Chacon et al. teaches a miniature keyboard (See Fig. 4, items 54, 56) comprising a plurality of keys for inputting data to portable electronic device (See Figs. 1, 4, items 24, in description See Col. 5, Lines 29-31); wherein keys of plurality of keys are individually sized (See in description Col. 1, lines 54-60); and wherein keys comprise at least one set of keys that are raised for providing key differentiation and to facilitate single key selection (See Fig. 4, items 24, 54,56,57,59, in description See Col. 5, Lines 29-67).

Chacon et al. does not show that multiple keys can be depressed by a single finger tip depression.

Since Chacon et al. teaches small sized keys in a hand-held terminal (See Figs. 1,4, items 54, 56, in description See Col.5, Lines 38-39 ("a second keypad is defined by a plurality of **larger computer keys**") and 44 (" differ in **size** and height to keys in the second keypad 56"), being of the small size of the keys in first keypad (54), obviously multiple keys could be depressed.

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It would have been obvious at the time of the invention to depress multiple keys in first keypad (54) by a single fingertip depression in Chacon et al. apparatus because the keys are small.

Modified Chacon et al. does not show a plurality of equally spaced keys on a single keypad wherein adjacent keys differ in height.

Preker teaches a plurality of equally spaced keys on a single keypad wherein adjacent keys differ in height (See Figure, items 3-11, in description See from Col. 3, Line 52 to Col. 4, Line 11).

It would have been obvious at the time of the invention to use a plurality of equally spaced keys on a single keypad wherein adjacent keys differ in height as shown by Preker in Chacon et al. apparatus in order to let a neighboring button accidentally actuated when a particular key is intended to be depressed by using the difference in height of the buttons (See Col. 2, Lines 46-48 in Preker reference).

As to claim 5, Chacon et al. teaches a plurality of keys is different shape (See Figs. 1, 4, items 54,56,50,57-58, in description See Col.1, Lines 56-60).

As to claim 7, Chacon et al. teaches a portable electronic device is a personal digital assistant (See Col. 3, Lines 7-11).

As to claim 18, Chacon et al. teaches a plurality of keys requires different amount of pressures to depress (See Col. 1, Lines 56—60).

As to claim 19, Chacon et al. teaches a portable computer system (See Col. 1, Lines 6-7) comprising: miniature keyboard coupled to electronic components (See Fig. 4, items 54, 56, in description See Col. 3, Lines 2-7) and comprising a plurality of keys for inputting data (See

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Figs. 1, 4, items 24, in description See Col. 5, Lines 29-31); wherein keys are individually sized (See in description Col. 1, lines 54-60); and wherein keys of plurality of keys comprise at least one set of keys that are raised for providing key differentiation and to facilitate single key selection (See Fig. 4, items 24, 54,56,57,59, in description See Col. 5, Lines 29-67).

Chacon et al. does not show a processor, keyboard and memory coupled to a bus.

Since Chacon et al. mentioned the electronic components coupled to a plurality of computer keys and to display screen (see Fig. 1, items 21, 24, 26, in description See Col. 3, Lines 2-7), it would have been obvious, if not inherent at the time of the invention to use processor, memory, bus for any computer system including hand-held electronic devices like in Chacon et al. apparatus.

Chacon et al. does not show that multiple keys can be depressed by a single finger tip depression.

Since Chacon et al. teaches small sized keys in a hand-held terminal (See Figs. 1,4, items 54, 56, in description See Col.5, Lines 38-39 ("a second keypad is defined by a plurality of **larger computer keys**") and 44 (" differ in **size** and height to keys in the second keypad 56"), being of the small size of the keys in first keypad (54), obviously multiple keys could be depressed.

It would have been obvious at the time of the invention to depress multiple keys in first keypad (54) by a single fingertip depression in Chacon et al. apparatus because the keys are small.

Modified Chacon et al. does not show a plurality of equally spaced keys on a single keypad wherein adjacent keys differ in height.

Preker teaches a plurality of equally spaced keys on a single keypad wherein adjacent keys differ in height (See Figure, items 3-11, in description See from Col. 3, Line 52 to Col. 4, Line 11).

It would have been obvious at the time of the invention to use a plurality of equally spaced keys on a single keypad wherein adjacent keys differ in height as shown by Preker in Chacon et al. apparatus in order to let a neighboring button accidentally actuated when a particular key is intended to be depressed by using the difference in height of the buttons (See Col. 2, Lines 46-48 in Preker reference).

As to claim 28, Chacon et al. teaches a portable electronic device (See Col. 1, Lines 6-7) comprising: a display screen coupled to electronic components (See Fig. 4, items 54, 56, in description See Col. 3, Lines 2-7); and input mechanism comprising a plurality of keys (See Figs. 1, 4, items 24, in description See Col. 5, Lines 29-31) that are individually sized such each individual key surface is substantially smaller (See in description Col. 1, lines 54-60) and wherein plurality of keys comprise set of keys having surfaces raised relative to other keys of plurality of keys to facilitate key navigation and key selection (See Fig. 4, items 24, 54,56,57,59, in description See Col. 5, Lines 29-67).

Chacon et al. does not show a processor, keyboard, display and memory coupled to a bus. Since Chacon et al. mentioned the electronic components coupled to a plurality of computer keys and to display screen (see Fig. 1, items 21, 24, 26, in description See Col. 3, Lines 2-7), it would have been obvious, if not inherent at the time of the invention to use processor, memory, bus for any computer system including hand-held electronic devices like in Chacon et al. apparatus.

Chacon et al. does not show that multiple keys can be depressed by a single finger tip depression.

Since Chacon et al. teaches small sized keys in a hand-held terminal (See Figs. 1,4, items 54, 56, in description See Col.5, Lines 38-39 (“a second keypad is defied by a plurality of **larger computer keys**”) and 44 (“ differ in **size** and height to keys in the second keypad 56”), being of the small size of the keys in first keypad (54), obviously multiple keys could be depressed.

It would have been obvious at the time of the invention to depress multiple keys in first keypad (54) by a single fingertip depression in Chacon et al. apparatus because the keys are small.

Modified Chacon et al. does not show a plurality of equally spaced keys on a single keypad wherein adjacent keys differ in height.

Preker teaches a plurality of equally spaced keys on a single keypad wherein adjacent keys differ in height (See Figure, items 3-11, in description See from Col. 3, Line 52 to Col. 4, Line 11).

It would have been obvious at the time of the invention to use a plurality of equally spaced keys on a single keypad wherein adjacent keys differ in height as shown by Preker in Chacon et al. apparatus in order to let a neighboring button accidentally actuated when a particular key is intended to be depressed by using the difference in height of the buttons (See Col. 2, Lines 46-48 in Preker reference).

As to claims 2,8,20,26,29, Chacon et al. does not show a plurality of keys comprise a first row of keys and wherein the surface of first row or columns of keys is raised above the surface of second row or columns of keys.

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Preker teaches all buttons of one row have their upper button surfaces at a greater height than all of the buttons of another row (See Figure, items 4,6,7,9, in description See Col. 3, Lines 57-67).

It would have been obvious at the time of the invention to implement the heights of the rows as shown by Preker in Chacon et al. apparatus to decrease or increase height of rows or columns in order to provide a keypad having reduced outer dimensions (See Col. 1, lines 58-61 in the Preker reference).

As to claims 10, 23, Chacon et al. teaches a plurality of keys is different shape (See Figs. 1, 4, items 54,56,50,57-58, in description See Col.1, Lines 56-60).

As to claims 12,25 Chacon et al. teaches a portable electronic device is a personal digital assistant (See Col. 3, Lines 7-11).

As to claims 13,31 Chacon et al. and Preker do not show raised set of keys comprise a substantially checkered pattern on miniature keyboard or a plurality of keys comprise alternating key diagonals of different heights with respect to adjacent key diagonal.

Since Chacon et al. teaches different raised set of keys and Preker teaches different raised rows, it would have been obvious at the time of the invention to implement substantially checkered pattern or a plurality of keys comprise alternating key diagonals of different heights with respect to adjacent key diagonal on miniature keyboard in Chacon et al. and Preker apparatus as obvious variations on the matter of selecting different set of keys in order to provide a keypad having reduced outer dimensions (See Col. 1, lines 58-61 in the Preker reference). Such a modification would have been considered a mere design consideration fails to patentably distinguish over the prior art of Chacon et al. and Preker references.

As to claim 14, Chacon et al. teaches a plurality of keys is different shape (See Figs. 1, 4, items 54,56,50,57-58, in description See Col.1, Lines 56-60).

As to claim 16, Chacon et al. teaches a portable electronic device is a personal digital assistant (See Col. 3, Lines 7-11).

2. Claims 3-4,9,21-22,27,30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chacon et al., Preker as aforementioned in claims 2,8,20,26,29 in view of Kiernan (PUB. No.:US 2002/0110238v A1).

Chacon et al. and Preker do not show rows or columns decrease or increase in height from a top of miniature keyboard to a bottom of miniature keyboard.

Kiernan teaches the keypad with tapers to a lower height towards the outer edge of the keypad (See Fig. 3, items 17-19,43,44, in description See Page 3, paragraph 0028).

It would have been obvious at the time of the invention to implement the heights of the rows as shown by Kiernan in Chacon et al. and Preker apparatus to decrease or increase height of rows or columns from a top to a bottom of miniature keyboard in order to tactically indicate the relative location of each key (See Page 1, paragraph 0001 in Kiernan reference).

3. Claims 6, 11, 15, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chacon et al., Preker as aforementioned in claims 2,8,13,20 in view of Miller (US Patent No. 5,660448).

Chacon et al., Preker do not show a plurality of keys is arranged in substantially a QWERTY keyboard fashion.

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Miller teaches a standard QWERTY keyboard (See Col. 1, Lines 9-11). It would have been obvious at the time of the invention to implement standard QWERTY keyboard as shown by Miller in Chacon et al. and Preker apparatus in order to allow to maintain of the typing speed and accuracy associated with conventional keyboard (See Abstract in the Miller reference).

4. Claim 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chacon et al. and Preker as aforementioned in claim 1 in view of Louis (US Patent No. 5,212,473).

Chacon et al. and Preker do not teach a plurality of keys makes tone when pressed.

Louis teaches the user hear an audible sound indicating the selected key has been successfully activated (See Fig.1, item 55, in description See Col. 3, Lines 58-64).

It would have been obvious at the time of the invention to implement the tone response as shown by Miller in Chacon et al. and Preker apparatus in order to facilitate the entry of information in a fast and accurate manner (See Col. 1, Lines 15-18 in the Louis reference).

Response to Amendment

5. Applicant's arguments filed on 12-17-03 with respect to claims 1-31 have been considered but are moot in view of the new ground(s) of rejection.

Telephone inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

ls

A handwritten signature in black ink, appearing to read 'Vijay Shankar', with a long, sweeping horizontal stroke extending to the right.

**VIJAY SHANKAR
PRIMARY EXAMINER**